

Course Information

Math 3351–002

Fall 2010

August 21, 2010

Instructor: Prof. Lance D. Drager. Office: Math 236. Office Phone: 742–2580, Ext. 242.. If you let the office phone ring long enough, you'll get me or a voice mail system you can leave a message on. My e-mail address is lance.drager@ttu.edu.

Course materials will sometimes be posted on my web page, which is <http://www.math.ttu.edu/~drager>.

Office Hours: To be announced in class. You can come by outside of formal office hours; I'll usually have time to talk to you. Please feel free to come by if you need help.

Other Sources of Help: The Mathematics Department Office has a list of people who offer tutoring for pay. Forming informal study groups with other students can be very helpful.

Text: The text is Dennis G. Gill and Michael R. Cullen, **Advanced Engineering Mathematics, Third Edition**, Jones and Bartlett, Boston, 2006.

Learning Outcomes: The students will extend their knowledge of differential equations and their solutions acquired in MATH 3350 by developing new methods to solve differential equations and by studying the concept of partial differential equations and their solutions and applications. In particular, the students learn: matrix algebra, linear algebraic equations and eigenvalues; the fundamental properties of linear systems, and their solutions; Fourier series and orthogonal functions; how to solve partial differential equations by separation of variables and Fourier series; to apply these techniques to the three classical equations: the heat, wave, and Laplace equations.

Calculator: A symbolic calculator like the TI-89 or TI Voyage 200 is **very highly** recommended!

Assessment of Learning Outcomes: The assessment of student's mastery of the skills and concepts as specified in the expected learning outcomes will occur, with appropriate course grades assigned, as follows:

1. 2 In-class exams.
2. 1 Takehome exam.

3. The final exam.
4. Exam corrections.
5. Homework.

The homework will be done using the Wework online system.

The in-class exams, takehome, and the final exam will all be equally weighted. I will drop the lowest of these four scores (which could be the score on the final). If you are satisfied with your grades on the three in-class exams, you can skip the final and let that be the dropped exam grade.

The homework will count for 15% of the final grade and Exam corrections will count for 15% of the final grade.

For each exam, I will determine a grade range for the A's, B's, C's, D's and F's. I will then linearly rescale the grades in the A range to the interval $[90, 100]$, the grades in the B range will be rescaled to the interval $[80, 89]$, and so forth.

At the end of the course, I will average the grades and assign letter grades with cutoffs 90% for A, 80% for B, 70% for C and 60% for D; I might lower these a little, but not much. Thus, with this system, you can determine your standing at any time.

For example, consider a hypothetical exam with the raw scores as in Table 1. The grade ranges might hypothetically be chosen as indicated. The numerical scores would then be rescaled as indicated in the table, using the formulas on the right and then rounding to the nearest point. The grade rescaling function would be as graphed in Figure 1.

Course Schedule

8/27–9/15 *Matrics*, Sections 8.1–8.6, 8.8.

9/17–9/27 *Systems of Linear Differential Equations*, Sections 10.1–10.2.

9/29 *Exam 1*

10/1–10/15 *Orthongonal Functions and Fourier Series*, Sections 12.1–12.4.

9/18–11/12 *Boundary-Value Problems in Rectangular Coordinates*, Sections 13.1–13.6, 13.8.

10/25 *Exam 2* (in the middle of above).

11/15–11/22 *Boundary-Value Problems in Other Coordinante Systems*, Sections 14.1–14.3

11/19 *Exam 3, Takehome Exam handed out*

11/29–12/8 *Integral Transforms*, Selected Topics from Chap. 15.

12/1 *Exam 3 due.*

12/8 *Last Day of Classes*

12.10 *Final Exam, 7:30am–10:00am*

Final Exam: The final exam is on Friday, Dec. 10, from 7:30 a.m. to 10:00 p.m. It will be given in our usual classroom.

Makeups: If you miss an exam you can, at your option, take that as the exam score to be dropped. If you are absent from an exam and convince me that your reason was legitimate, I will give a makeup exam. Late homework will only be accepted with a serious, legitimate excuse.

Homework on the Web: The homework will be done on the world wide web using the Webworks system. There will be link to the homework site on my homepage. Your username is your eraider name. The initial password is your Id number (starts with R). Change the password after you log in.

Class Attendance: To begin with, I will not count attendance towards the grade, although I may pass out a sign up sheet to check the class roll. Many studies show that class attendance is important in getting a good grade. I will institute an attendance system if it seems necessary!

Remember, you are responsible for all material covered in class and all announcements made in class. If you have to miss a class, you should check with me or a classmate to see what happened.

Formative Assessment: Continuous formative assessment of the progress of the course will occur via ongoing communication between the instructor and

the students. To this end, all students are encouraged to ask questions during class and to seek the instructor's help out of class when needed. Other activities in support of student-instructor communication will include: practice exams and quizzes, review of homework, and personal interviews with students doing poorly on work assigned at the beginning of the course.

Identification: You should be prepared to show your Texas Tech picture ID at any quiz or exam.

Accommodations for Disabilities: Any student who, because of a disability, may require special arrangements in order to meet course requirements should contact the instructor as soon as possible to make necessary accommodations. Students should present appropriate verification from Disabled Student Services, Dean of Students Office (AccessTECH). No requirement exists that accommodations be made prior to completion of this approved University process.

Religious Holy Days: A student may be absent from class for a religious holy day, as legally defined, and will be allowed to make up any missed examination or assignment within a reasonable time after the absence. You must notify me at the beginning of the session of any scheduled class days on which you will be absent for a religious holy day. See http://www.depts.ttu.edu/officialpublications/catalog/_AcademicsRegulations.php

Academic Misconduct: It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a high standard of integrity. The attempt of students to present as their own work any work that they have not honestly preformed is regarded by the faculty and administration as a serious offense and renders the offenders liable to serious consequences, possibly suspension.

For more information, and a description of what is considered to be misconduct, see http://www.depts.ttu.edu/officialpublications/catalog/_AcademicsRegulations.php

Civility in the Classroom: Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any other form of distraction. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class.

For more information, see http://www.depts.ttu.edu/officialpublications/catalog/_AcademicsRegulations.php

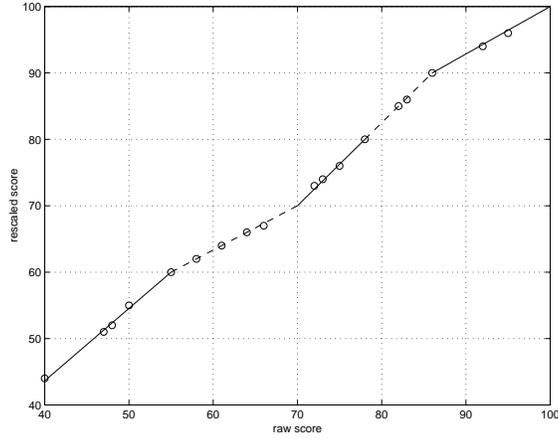


Figure 1: Graph of the grade rescaling function

	Raw (x)	Rescaled (y)	
A	95	96	$y = \frac{100 - 90}{100 - 86}(x - 86) + 90$
	92	94	
	86	90	
B	83	86	$y = \frac{90 - 80}{86 - 78}(x - 78) + 80$
	82	85	
	78	80	
C	75	76	$y = \frac{80 - 70}{78 - 70}(x - 70) + 70$
	73	74	
	72	73	
(cut off at 70)			
D	66	67	$y = \frac{70 - 60}{70 - 55}(x - 55) + 60$
	64	66	
	61	64	
	58	62	
F	55	60	$y = \frac{60}{55}x$
	50	48	
	48	52	
	47	45	
	40	44	

Table 1: Grade rescaling